CLAIMS:

1. An antenna system, to enable communication with a moving vehicle via a satellite, comprising:

an array comprising subarrays positioned in a two-dimensional arrangement including subarrays in columns parallel to the length dimension of the array;

the array including a plurality of said subarrays each of nominally square form with four sides, each said side aligned at nominally 45 degrees to said length dimension of the array;

each individual subarray of said plurality of subarrays including at least one slotted waveguide extending nominally parallel to a side of the individual subarray;

a signal port; and

a feed configuration to couple signals between the signal port and each subarray.

2. An antenna system as in claim 1, wherein each individual subarray of said plurality includes four slotted waveguides in parallel side-by-side arrangement and each waveguide includes at least one row of slots extending nominally parallel to a side of the individual array.

3. An antenna system as in claim 1, wherein said length dimension is parallel to the plane of the antenna beam in which said beam has its minimum beamwidth.

4. An antenna system as in claim 1, wherein the subarrays are arranged for uniform excitation via said feed configuration.

5. An antenna system as in claim 1, wherein the array comprises flat-plate type subarrays contiguously positioned in a diamond-type pattern.

6. An antenna system as in claim 1, additionally comprising:

phase shifters coupled to the feed configuration and arranged to enable limited electronic beam scan.

7. An antenna system as in claim 1, wherein said phase shifters are arranged to enable electronic beam scan limited to an angular range up to two degrees off array boresight.

8. An antenna system as in claim 1, additionally comprising:

an azimuth scan assembly to mechanically rotate said array in azimuth.

9. An antenna system as in claim 8, additionally comprising:

an elevation scan assembly to mechanically tilt said array.

10. An antenna system, to enable communication via satellite, comprising:

an array comprising subarrays positioned in a two-dimensional arrangement including subarrays in columns nominally parallel to the length dimension of the array;

the array including a plurality of said subarrays each of nominally parallelogram form and each having sides aligned at an angle in the range of 30 to 60 degrees to said length dimension of the array;

each individual subarray of said plurality of subarrays including radiating elements;

a signal port; and

a feed configuration to couple signals between the signal port and each subarray.

11. An antenna system as in claim 10, wherein each subarray of said plurality of subarrays is nominally one of square and rectangular.

12. An antenna system as in claim 10, wherein each individual subarray includes at least one row of radiating elements.

13. An antenna system as in claim 12, wherein each said row of radiating elements is a row of slots.

14. An antenna as in claim 13, wherein each row of slots is nominally parallel to a side of a subarray.

15. An antenna system as in claim 10, wherein each individual subarray includes at least one slotted waveguide configuration extending nominally parallel to a side of the individual subarray and said radiating elements are slots in said waveguide.

16. An antenna system as in claim 15, wherein each subarray includes four slotted waveguides in parallel side-by-side arrangement.

17. An antenna system as in claim 10, wherein said length dimension is parallel to the plane of the antenna beam in which said beam has its minimum beamwidth.

18. An antenna system as in claim 10, wherein the subarrays are arranged for uniform excitation via said feed configuration.

19. An antenna system as in claim 10, wherein the array comprises flat-plate type subarrays contiguously positioned in a diamond-type pattern.

20. An antenna system as in claim 10, additionally comprising:

phase shifters coupled to the feed configuration and arranged to enable limited electronic beam scan.

21. An antenna system as in claim 20, wherein said phase shifters are arranged to enable electronic beam scan limited to an angular range up to two degrees off array boresight.

22. An antenna system, in the form of a stack of layers, comprising:

a base layer having an opening suitable to receive a radio-frequency signal;

a second layer having a signal distribution chamber including a first section aligned with said opening to receive said signal and a plurality of divided signal regions to receive respective portions of said signal;

a third layer having a plurality of openings, one aligned with each said divided signal region, each opening of said plurality suitable to receive one of said portions of said signal;

a fourth layer having a plurality of parallel waveguide configurations each aligned with one opening of said plurality of openings and suitable to receive one of said portions of said signal; and

a top layer having an arrangement of slot radiating elements positioned above each of the waveguide configurations, said slot radiating elements suitable to radiate signals;

each said layer comprising a conductive layer of predetermined thickness and having at least one opening extending therethrough.

23. An antenna system as in claim 22, wherein each said layer is formed of metal.

24. An antenna system as in claim 22, wherein the fourth layer includes four parallel openings, each comprising a waveguide configuration.

25. An antenna system as in claim 22, wherein the top layer includes, above each waveguide configuration, a series of slots each having its length aligned parallel to the length of the respective waveguide configuration.

26. An antenna system as in claim 22, wherein said layers are stacked, each with at least one main surface in contact with a main surface of another of said layers.